

April 16, 2015

CH2M HILL Plateau Remediation Company
2420 Stevens Center Place
P.O. Box 1600
Richland, WA 99352
Attn.: Tracey A. Burch

Subject: Geotechnical Laboratory Testing Services, Data Deliverable for SDG # WA070120150007, Rev. 0

Enclosed is the final report on geotechnical analyses performed by RJ Lee Group in conjunction with PBS Engineering and Environmental, Inc. (PBS) for Sample Delivery Group number (SDG #) WA070120150007.

General Set Comments

RJ Lee Group received from CH2M-Hill Plateau Remediation Company (CHPRC) 1 sample to be tested for geotechnical analysis at the Columbia Basin Analytical Laboratories. There are no SIRs associated with this SDG.

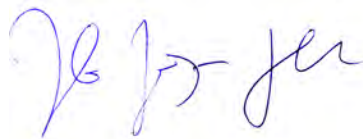
The CHPRC sample, in SDG # WA070120150007, has been assigned a PBS Geotechnical Lab Sample number per the below table.

CHPRC Sample #	SDG #	Geotechnical Lab Sample #
B2YRN4	WA070120150007	H-0022

This project deliverable, provided in Attachment 1, contains the reports of the requested analytical results and a copy of the associated chain of custody for the sample listed above.

The analytical results provided in this deliverable relate only to the items tested. The sample was received in acceptable condition unless otherwise noted in the attached report(s).

I certify that this analytical report is in compliance with the Hanford SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the Laboratory Director or a designee as verified by the following signature.



April 16, 2015

Dr. Heinz Huber
Laboratory Manager, Columbia Basin Analytical Laboratories

Date

If you have any questions, please feel free to contact us at 509-545-4989 or email at hhuber@rjleegroup.com.

Attachment 1

PBS Geotechnical laboratory Testing Results, SDG # WA070120150007,
dated March 18, 2015

April 16, 2015



Engineering +
Environmental

March 18, 2015

RJ Lee Group, Inc.
Attn: Mr. Larry Lockrem
Columbia Basin Analytical Laboratories
2710 North 20th Avenue
Pasco, Washington 93301

Re: Geotechnical Laboratory Testing Results
Sample Delivery Group No. WA070120150007
PBS Project No. 63737.000

Dear Mr. Lockrem:

In accordance with your request, PBS Engineering and Environmental Inc. (PBS) is providing you with the results of our recent geotechnical laboratory testing. Our services were provided in accordance with the request provided with Sample Delivery Group (SDG) number WA070120150007.

We performed the following test:

- Hydraulic Conductivity – Constant Head (ASTM D2434)

The appropriate permeability/hydraulic conductivity test (ASTM D2434 or D5084) was selected based on the texture characteristics of the sample received, per section 3.2.2 of the contract. The test was performed in general accordance with the above-mentioned ASTM Standards, except for the following cases:

- **Hydraulic Conductivity – Constant Head (ASTM D2434):** The sample was not tested in a permeameter cylinder appropriately sized based on the maximum particle size of the soil due to the lack of adequate sample volumes provided. The test was performed in the closest appropriately sized cylinder available for the volume of sample provided, per the direction of RJ Lee and CHPRC.

400 Bradley Boulevard, Suite 300, Richland, WA 99352
509.942.1600 Main
866.727.0140 Fax
www.pbsenv.com

April 16, 2015

Mr. Larry Lockrem

Re: Geotechnical Laboratory Testing Results – WA070120150007

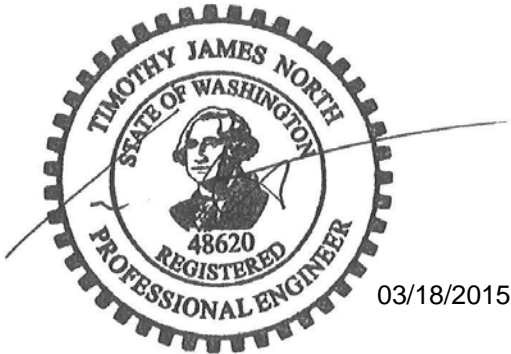
March 18, 2015

Page 2 of 2

We trust this letter meets your current needs. If you have any questions, or wish to further discuss our observations, conclusions, and recommendations, please contact us at 509.942.1600.

Sincerely,

PBS Engineering and Environmental, Inc.



03/18/2015

Timothy J. North, P.E.
Project Geotechnical Engineer



Nathan A. Bowles, P.E.
Senior Engineer/Operations Manager

TN/NB

Attachments: Report of Laboratory Testing – Hydraulic Conductivity – Constant Head
Chain of Custody

COLLECTOR

COMPANY CONTACT

TELEPHONE NO.

PROJECT COORDINATOR

PRICE CODE

8H

DATA
TURNAROUND
30 Days / 30
Days

SAMPLING LOCATION

PROJECT DESIGNATION

FIELD LOGBOOK NO.

SAF NO.

AIR QUALITY

☐METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ICE CHEST NO.

FIELD LOGBOOK NO.

ACTUAL SAMPLE DEPTH

COA

300085

ORIGINAL

SHIPPED TO

OFFSITE PROPERTY NO.

BILL OF LADING/AIR BILL NO.

RJEE - GEOTECHNICAL

PRESERVATION

HOLDING TIME

TYPE OF CONTAINER

NO. OF CONTAINER(S)

VOLUME

SAMPLE ANALYSIS

MATRIX* POSSIBLE SAMPLE HAZARDS/ REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

None

6 Months

Split Spoon Liner

1

1000g

SEE ITEM (1) IN SPECIAL INSTRUCTIONS

A=Air

DL=Drum

Liquids

DS=Drum

Solids

L=Liquid

O=Oil

S=Soil

SE=Sediment

T=Tissue

V=Vegetation

W=Water

WI=Wipe

X=Other

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.

MATRIX*

SAMPLE DATE

SAMPLE TIME

B2YRN4

SOIL

12-31-14

13 35

✓

WHA070120150007

H-0022

TRVL-14-188

TRVL-14-188

TRVL-14-188

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

TRVL-14-188

(1) D2434_PERMEABILITY: COMMON;

D5084_HYDRAULIC

CONDUCTIVITY: COMMON;

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

F.M. Hall/CHPRC

JAN 07 2015

0940

SSU #1

JAN 07 2015

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F.M. Hall/CHPRC

JAN 07 2015

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JAN 07 2015

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JAN 07 2015

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PRINTED ON 11/17/2014

A-6003-618 (REV 2)

April 16, 2015



Geotechnical Laboratory Sample Receipt

Date/Time Received: 1/7/15 11:19

SDG#: WA 070120150007

Work Order Number: _____

SAF# F13-046-078

Shipping Container Identification: _____

1. Custody Seals on shipping container intact? Yes ☒ No ☐

2. Custody Seals dated and signed? Yes ☒ No ☐

3. Chain-of-Custody record present? Yes ☒ No ☐

4. Cooler temperature NA

5. Vermiculite/packing materials is Wet ☐ Dry ☒

6. Number of samples in shipping container: 1

7. Samples have:

☒ tape ☐ hazard labels

☒ custody seals ☒ appropriate sample labels

8. Samples are:

☒ in good condition for the geotechnical tests required ☐ leaking/desiccated

☐ broken or disaggregated

9. Were any anomalies identified in sample receipt? Yes ☐ No ☒

10. Description of anomalies (include sample numbers):

11. Rad Screen Performed: _____

12. Chain of Custody # F13-046-078

Comments: _____

Sample Custodian/Laboratory: C Lopez Date: 1/7/15

Telephoned to: _____ On _____ by _____ 7 of 7